SPLIT SAMPLING PLAN

SOIL PESTICIDES INVESTIGATION
MARCH 19, 2001
GEORGE AIR FORCE BASE
VICTORVILLE, CALIFORNIA

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U.S. EPA Site ID No.	CA2570024453
Contract No.	68-W-98-220
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February 16, 2001

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1. Introduction

This Split Sampling Plan was developed by TechLaw, Inc. for the United States Environmental Protection Agency (EPA) Federal Facilities Cleanup Branch. The work is being conducted by TechLaw, Inc. under U.S. EPA Contract No. 68-W-98-220 and U.S. EPA Work Assignment No. 220-11-09WQ. The Split Sampling Plan describes split soil sampling activities to take place at George Air Force Base (AFB) in Victorville, California during the Pesticides Investigation, scheduled for March 2001. Soil sampling will occur on March 19, 2001. Mr. James Chang and Mr. Rich Freitas of U.S. EPA will be informed if sampling dates are changed.

2. Background

The Air Force is conducting the Pesticides Investigation to evaluate the nature and extent of the pesticide dieldrin in soil and groundwater in the vicinity of LF-39. This investigation is being carried out by the Air Force as described in the Final Sampling and Analysis Plan Addendum and Health and Safety Plan for Groundwater Pesticide Investigation, dated November 2000 ("the SAP Addendum"). Two groundwater monitoring wells (NZ-89 and NZ-91) have already been installed as part of this investigation. The Air Force collected groundwater samples from both wells, as well as from existing wells NZ-63 and NZ-66. Dieldrin was detected in each groundwater sample at concentrations of 0.09 μg/l (NZ-63), 0.12 μg/l (NZ-89), 0.14 μg/l (NZ-91), and 0.16 μg/l (NZ-66).

The Air Force will also be conducting soil sampling and analysis at the Golf Course and the Housing Area, as a preliminary step in investigating possible source areas of dieldrin. TechLaw will collect split soil samples and additional surface soil samples to provide data to evaluate the quality of the Air Force's soil analyses and to provide additional characterization data of surface soils.

This Split Sampling Plan is intended to be used in conjunction with the U.S. Air Force's Final Basewide Sampling and Analysis Plan (SAP), (HydroGeoLogic, 1998), which includes a Field Sampling Plan (FSP) and a Quality Assurance Project Plan (QAPP). The procedures described in the Basewide SAP FSP for sample containers (Section 6.2.1), preservation techniques (Section 6.2.2), and holding times (Section 6.2.2) will be followed.

3. Scope and Objectives/Maps

This Split Sampling Plan is provided for the collection and analysis of soil samples associated with the Pesticides Investigation at George AFB. Split soil samples will be collected at locations SS-1 through SS-6. The samples will be collected at a depth of 1.5 to 2.0 feet below ground surface (bgs). In addition, TechLaw will collect one surface soil sample at each location. Attachment 1 contains a map showing the locations of the soil samples.

In addition to split sampling activities, TechLaw personnel may conduct a field audit, if requested by the U.S. EPA Work Assignment Manager (WAM). The field audit will be performed, if required, using U.S. EPA's Audit Plan (U.S. EPA, 1998). The field audit will consist of overseeing groundwater sampling activities performed by the Air Force's contractor, Montgomery Watson. TechLaw will note any deviations from the activities described in the Basewide Sampling and Analysis Plan (HydroGeoLogic, 1998) and the Final SAP Addendum for the Pesticide Investigation.

4. Rational for Sample Locations and Analytical Parameters

A total of twelve soil samples will be collected (plus appropriate quality control samples). Samples will be collected from six locations, SS-1 through SS-6. At each location, one surface sample will be collected. The Air Force will not be collecting any surface samples. In addition, TechLaw will collect a split of the soil sample collected by the Air Force at 1.5 to 2.0 feet bgs. The rationale for each sample location is provided in the Final SAP Addendum. Each soil sample will be analyzed for pesticides, including dieldrin, using the CLP Method for Pesticides.

5. Field Methods and Procedures

5.1 Sample Collection

All sample collection will be coordinated with the U.S. EPA Region IX sampling coordinator, Mr. Rich Freitas. Mr. Freitas will be notified two weeks before the samples are collected, the day prior to the sample collection, and the day of the sample collection.

Split samples will be collected at the same time that the Air Force's contractor collects soil samples. Soil for the split samples will be homogenized before placing in Air Force's and TechLaw's sample containers. Sample containers will be procured by TechLaw as pre-cleaned containers. Sample volumes, container types, and preservation requirements to be implemented are listed in Attachment 2. Sample containers will be appropriately labeled and will have custody seals attached. Sample will be submitted to the laboratory using sample names indicated on Attachment 3.

TechLaw field personnel will use the Air Force's sampling equipment (trowel, hand auger). Equipment will be decontaminated by cleaning with laboratory grade detergent and water, followed by a rinse with deionized water.

5.2 Quality Control Samples

Appropriate quality control (QC) samples will be collected by TechLaw in accordance with the Basewide QAPP (HydroGeoLogic, 1998). Attachment 3 lists the QC samples to be collected. Duplicates will be collected at a rate of one per ten samples collected.

Matrix spike/matrix spike duplicate (MS/MSD) analysis will be conducted to measure accuracy and precision. Sufficient volume will be collected so that MS/MSD analysis can be performed at a frequency of 10 percent.

One equipment blank sample will be collected and analyzed to evaluate decontamination procedures. The equipment blank sample will be collected by pouring deionized water over the sampling trowel and collecting it in a one-liter amber glass container.

One performance evaluation (PE) sample, containing dieldrin and potentially other pesticide analytes, will be submitted to the CLP laboratory for analysis to evaluate the CLP laboratory's analytical results.

5.3 Analysis

All samples will be shipped via overnight carrier in coolers to the U.S. EPA Contract Laboratory Program (CLP) laboratory specified by U.S. EPA Region 9. All soil samples will be analyzed for pesticides using the CLP organic OLM04.2 (pesticides) method. The detection limit for dieldrin will be 0.0033 mg/kg. Attachment 4 provides a list of analytes and quantitation limits for the CLP organic OLM04.2 (pesticides) method.

At least 10% of the analytical data generated by the laboratory(s) will undergo data validation by U.S. EPA. It is likely, as this is a split sampling event, that the data validation will only consist of a general check on the QC data provided with the analytic results. If the results of the split sampling indicate discrepancies between George AFB and TechLaw results, additional data review and/or validation may be required.

5.4 Shipping

Samples will be shipped in coolers containing sufficient ice to keep the samples at 4±2°C. The ice in the cooler will be contained in double zip-lock bags. The cooler will have two custody seals affixed across the cooler lid. The samples will remain in the custody of TechLaw until relinquished for shipment to the analytical laboratory. A chain of custody form will accompany the samples from the point of origin to the analytical laboratory. The chain-of-custody will be placed in a plastic bag and will be taped to the inside of the cooler lid. If samples are to be shipped on a Friday, the laboratory will be contacted and information regarding Saturday delivery of samples will be documented in the field log book.

The Region 9 Sample Coordinator will be notified immediately upon shipment of the samples. The Region 9 Sample Coordinator can be reached at (415) 744-2315.

Detailed instructions for sample shipping are contained in Attachment 5.

6. Data Evaluation and Reporting

The EPA data results will be compared with the George Air Force Base data to determine if the results are in agreement. Table 6-1 contains the preliminary standards that TechLaw will use to judge the comparability of the Air Force and TechLaw samples. The split sampling report will contain the split sample data results, the data evaluation report, assessment of the split sample data, and the results of any field audits that took place.

Table 6-1
Data Comparison Criteria
George Air Force Base
Victorville, California

Disagreement	Major Disagreement
Difference between results is greater than two times the Method Detection Limit (MDL) when one result is less than the MDL	Difference between results is greater than four times the Method Detection Limit (MDL) when one result is less than the MDL
Relative Percent Difference (RPD) of results is greater than 100% if either result is less than 5 times the MDL	RPD of results is greater than 200% if either result is less than 5 times the MDL
RPD of results is greater than 30% if both results are greater than 5 times the MDL	RPD of results is greater than 60% if both results are greater than 5 times the MDL

RPD = abs { 2*(R1 - R2)/(R1+R2) } * 100%
where R1 = Result 1, and R2 = Result 2

7. Waste Disposal

All investigation derived waste will be disposed of by the Air Force.

8. Personnel

Ms. Indira Balkissoon, of TechLaw, will manage the split sampling effort at George Air Force Base. Mr. Glenn Androsko of TRC Environmental, subcontractor to TechLaw, will collect and ship the soil samples at George Air Force Base. Ms. Balkissoon will prepare the report of sampling results. Mr. Terry Uecker, of TechLaw, will act as the Quality Assurance Officer. Mr. Jeff Raines, of TechLaw, will review the report of sampling results.

9. Schedule

Split sampling activities will take place in March 2001. Specific sampling dates will depend on the Air Force's sampling schedule. The split sampling will take approximately one to two days. Following receipt of the analytical results, TechLaw will inform the U.S. EPA WAM that the data has been received. The split sampling report will be finalized and submitted to James Chang at U.S. EPA within 45 days of receipt of the laboratory data.

10. References

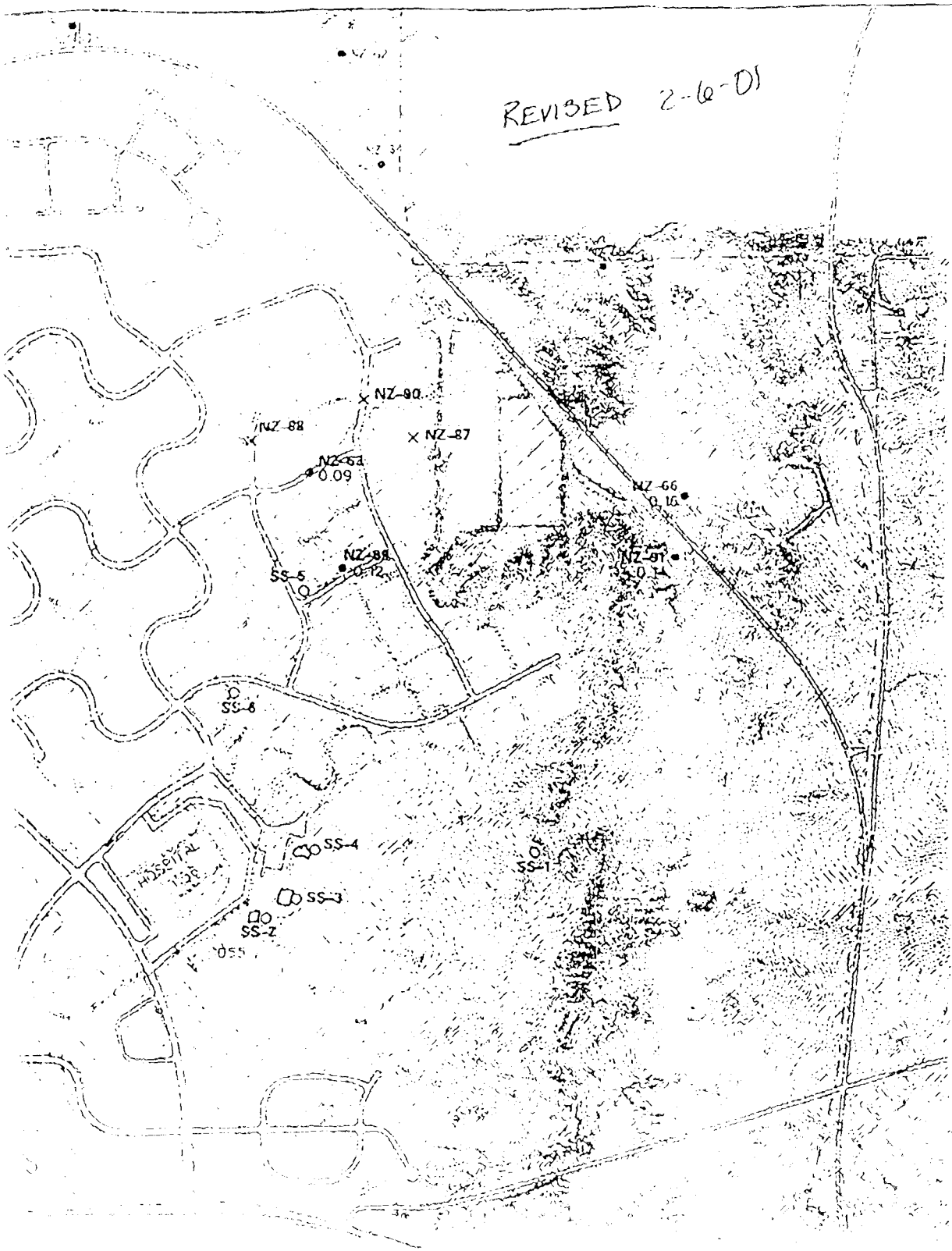
HydroGeoLogic, Inc. Final Basewide Sampling and Analysis Plan, George Air Force Base, August 1998.

Montgomery Watson. Final Sampling and Analysis Plan Addendum and Health and Safety Plan for Groundwater Pesticide Investigation, George Air Force Base, November 2000.

U.S. EPA. Quality Assurance Oversight Plan for George Air Force Base, October 1998.

Attachment 1

Sample Location Maps
Pesticide Investigation
Split Sampling, March 2001
George Air Force Base

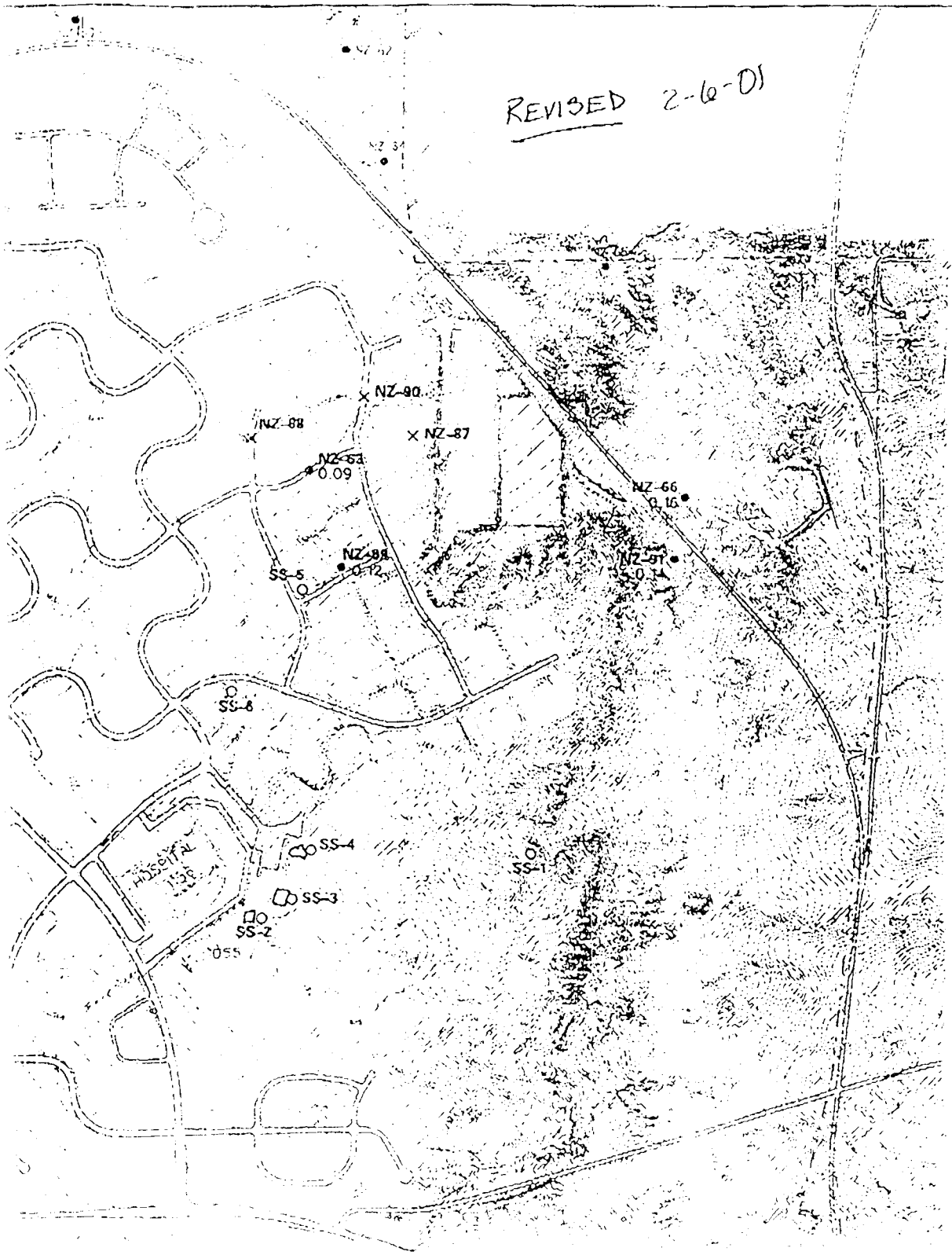


MONTGOMERY WATSON

Walnut Creek, California

GEORGE AIR FORCE BASE

GROUNDWATER PESTICIDE INVESTIGATION



MONTGOMERY WATSON
Walnut Creek, California

GEORGE AIR FORCE BASE
GROUNDWATER PESTICIDE
INVESTIGATION

FIGURE

Attachment 2
Requirements for Containers, Preservation Techniques, Sample Volumes, and Holding Times
Split Sampling Event Pesticides Investigation,
March 2001
George Air Force Base

Analytical Method	Container	Preservation	Holding Time
CLP Pesticides, soil (SOW OLM04.2)	8 oz. jar	4°C	14 days until extraction and 40 days after extraction
CLP Pesticides, groundwater (SOW OLM03.2)	amber glass liter	4°C	14 days until extraction and 40 days after extraction

Attachment 3
Sample Numbering Plan
Split Sampling Event Pesticides Investigation, March 2001
George Air Force Base

Location	Depth	Sample Type	Matrix	Analysis	Sample Number
SS-1	Surface	PR	Soil	Pesticides (CLP)	
	1.5-2.0 ft	PR MS/MSD*	Soil	Pesticides (CLP)	
	1.5-2.0 ft	FD	Soil	Pesticides (CLP)	
SS-2	Surface	PR	Soil	Pesticides (CLP)	
	NA	EB	Water	Pesticides (CLP)	
	NA	PE	Soil	Pesticides (CLP)	
	1.5-2.0 ft	PR	Soil	Pesticides (CLP)	
SS-3	Surface	PR	Soil	Pesticides (CLP)	
	Surface	FD	Soil	Pesticides (CLP)	
	1.5-2.0 ft	PR	Soil	Pesticides (CLP)	
SS-4	Surface	PR MS/MSD*	Soil	Pesticides (CLP)	
	1.5-2.0 ft	PR	Soil	Pesticides (CLP)	
SS-5	Surface	PR	Soil	Pesticides (CLP)	
	1.5-2.0 ft	PR	Soil	Pesticides (CLP)	
SS-6	Surface	PR	Soil	Pesticides (CLP)	
	1.5-2.0 ft	PR	Soil	Pesticides (CLP)	

* Two 8-ounce jars collected
PR - Primary Sample
FD - Field Duplicate
EB - Equipment Blank
PE - Performance Evaluation
MS/MSD - Matrix Spike/Matrix Spike Duplicate

Attachment 4

CLP Method, Pesticides, Target Analyte List and Contract Required Detection Limits (SOW OLM04.2 - soil, SOW OLC03.2 - groundwater)

Method	Analyte	Quantitation Limit (Low Soil - ug/Kg)	Quantitation Limit (water - ug/L)
CLP, Pesticides			
	ALPHA-BHC	1.7	0.01
	BETA-BHC	1.7	0.01
	DELTA-BHC	1.7	0.01
	GAMMA-BHC (LINDANE)	1.7	0.01
	HEPTACHLOR	1.7	0.01
	ALDRIN	1.7	0.01
	HEPTACHLOR-EPOXIDE	1.7	0.01
	ENDOSULFAN I	1.7	0.01
	DIELDRIN	3.3	0.02
	4,4'-DDE	3.3	0.02
	ENDRIN	3.3	0.02
	ENDOSULFAN II	3.3	0.02
	4,4'-DDD	3.3	0.02
	ENDOSULFAN SULFATE	3.3	0.02
	4,4'-DDT	3.3	0.02
	METHOXYCHLOR	17	0.10
	ENDRIN KETONE	3.3	0.02

Method	Analyte	Quantitation Limit (Low Soil - ug/Kg)	Quantitation Limit (water - ug/L)
CLP, Pesticides			
	ENDRIN ALDEHYDE	3.3	0.02
	ALPHA-CHLORDANE	1.7	0.01
	GAMMA-CHLORDANE	1.7	0.01
	TOXAPHENE	170	1.0

Attachment 5

Instructions for Sample Shipping and Documentation

INSTRUCTIONS FOR

SAMPLE SHIPPING

AND DOCUMENTATION

November 1997

Quality Assurance Management Section
U. S. EPA Region 9
San Francisco, CA

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FIGURES

1.0 GENERAL

1.1 When all paperwork has been completed by the sampler and samples are ready to be shipped, place the laboratories' copies in a plastic bag and tape it to the inside of the lid of the cooler(s). For CLP Analytical Services, Contract Laboratory Analytical Services Support's (CLASS) copies must be submitted within 5 days of sampling. The Region's copies may be submitted at that time or at the end of the sampling event. If the sampling event covers an extended length of time, the Region's copies must be submitted weekly. (Note: The RSCC coordinator will not forward CLASS's copies. They will be returned to the sampler.)

QAMS address:

U.S. EPA Region 9
Quality Assurance Program (PMD-3)
75 Hawthorne Street
San Francisco, CA 94105
Attn.: RSCC Coordinator

CLASS address:

Contract Laboratory Analytical Services Support
DynCorp
2000 Edmund Halley Dr.
Reston, VA 20191-3436
Attn.: Region 9 Coordinator

1.2 For analyses performed by the Regional Laboratory, DO NOT send any copies of the paperwork to the Contract Laboratory Analytical Services Support (CLASS).

1.3 DISTRIBUTION OF COPIES

1.3.1 CLP ANALYTICAL SERVICES

1.3.1.1 ORGANIC TRAFFIC REPORT/CHAIN-OF-CUSTODY FORM

a. Blue (original) copy to QAMS, Region 9
b. Pink (second) copy to CLASS
c. White (third) and Yellow (fourth) copies accompany samples to laboratory
d. Photocopy for sampler's files

1.3.1.2 INORGANIC TRAFFIC REPORT/CHAIN-OF-CUSTODY FORM

a. Green (original) copy to QAMS, Region 9
b. Pink (second) copy to CLASS
c. White (third) and Yellow (fourth) copies accompany samples to laboratory
d. Photocopy for sampler's files

1.3.2 REGIONAL ANALYTICAL PROGRAM (RAP):

1.3.2.1 RAP CHAIN-OF-CUSTODY FORM

a. White (original) copy to laboratory with samples
b. Pink copy to QAMS, Region 9
c. Photocopy for sampler's file

1.3.3 FIELD QA/QC SUMMARY FORM

a. Original to QAMS, Region 9
b. Photocopy for sampler's files

2.0 SAMPLE SHIPMENTS

2.1 Calling in shipments to the RSCC coordinator

2.1.1 Call the EPA Regional Sample Control Center (RSCC) coordinator on a daily basis, even if no shipments were made. The RSCC coordinator may be reached at (415) 744-1498.

2.1.2 Try to stick to the sampling schedule. If this is not possible, let the RSCC coordinator know immediately so other arrangements can be made.

2.1.3 Notify the RSCC coordinator within 12 hours of sample shipments. Calling in sample shipments to the RSCC coordinator is MANDATORY. Provide the following information to the RSCC coordinator:

1. Case number
2. Name of Laboratory
3. Date of shipment
4. Carrier and airbill number
5. Number of samples shipped by matrix and analysis type
6. Number of coolers shipped
7. Information on completions, changes, delays, etc.

2.2 Special shipments (i.e., Saturday delivery/pickup)

2.2.1 General - Friday shipments for Saturday delivery/pickup must be called in by noon (12:00 pm) Friday. This is to enable the RSCC coordinator to pass the information on to CLASS or to the laboratories. Samplers may not contact the laboratories directly. (Laboratories do not have to accept notification of delivery of samples from sources other than CLASS or RSCC.)

2.2.2 Regional Laboratory - The Regional Laboratory is located within a gated compound that is closed on weekends and holidays. Designated laboratory personnel will pickup the samples at the Federal Express office, take them to the laboratory and place them inside the refrigerators. If the following shipping instructions are not followed, an

unsuccessful delivery attempt will be made to the Regional Laboratory. In addition, the staff member on call will not be able to pickup the samples, since they will not be at the Federal Express office.

To ensure that samples are held at the Federal Express office, please be sure to complete the following items:

1. On the lower left side of the Federal Express airbill, "For HOLD at FedEx Location check here," mark the box for "Hold Saturday."

2. In Section 3 of the airbill, print the following Federal Express office address:

   1600 63rd Street
   Emeryville, CA 94608

Federal Express may affix stickers to the coolers. Be sure they read "SATURDAY FEDERAL EXPRESS CENTER HOLD" or something similar. Under no circumstances should a "SATURDAY DELIVERY" sticker be placed on the cooler.

If a carrier other than Federal Express is used, please call the RSCC coordinator (415-744-1498) to make special arrangements.

2.2.3 Most CLP laboratories and other commercial laboratories contracted by QAP are staffed on Saturdays. Therefore, coolers can be delivered directly to these laboratories. In this case, the "SATURDAY DELIVERY" sticker should be placed on the cooler.

2.2.4 Laboratories may request advance notification of the arrival of certain types of samples, such as samples with very short holding times (e.g., Cr +6) that will be hand delivered to the laboratory. Required deadlines for notification of sample shipments in these special cases will be determined on a case by case basis. The RSCC coordinator will inform the samplers as to when notification of sample delivery is required (e.g., by noon on the day samples will be delivered). This is to facilitate the laboratory(ies) having personnel available to analyze the samples as soon as they arrive.

2.3 Cooler Return

Samplers are responsible for providing laboratories with a means to return coolers to their place of origin. The easiest way is to enclose an airbill with return shipping instructions (i.e., the address filled in as to where the coolers are to be returned to) and an account number to charge shipping costs to.

Samplers using EMFAC coolers should refer to Section 7 of the

EMFAC Users Guide for cooler return instructions. EPA contractors should contact their EPA Project Officer for details on acceptable modes of cooler return and shipping cost reimbursement.

3.0 CLP ANALYTICAL SERVICES (CLPAS) TRAFFIC REPORT/CHAIN-OF-CUSTODY FORMS FOR ORGANIC AND INORGANIC ANALYSES

3.1 CASE DOCUMENTATION

Complete this form when collecting CLPAS samples. See Attachments 1 through 3 for examples.

Enter the CLPAS case number in the box(es) located in the upper right corner of the form. CLPAS case numbers have the format "xxxxx" (e.g., 18123).

3.2 HEADER INFORMATION

3.2.1 Box 1 - PROJECT CODE/SITE INFORMATION

Enter the Project Code (i.e., $F), Site Name, City, State, Site Spill ID. **(Note: the information entered here does not go through to the laboratory's copies.)**

If sampling is not under the Superfund program, enter the Account code (account to be billed), any Regional Information and the name of the program (e.g., RCRA) in the box titled "Non-Superfund program."

3.2.2 Box 2 - REGIONAL INFORMATION

Enter the Region number, the name of your sampling company, and your name and signature in the designated spaces.

3.2.3 Box 3 - TYPE OF ACTIVITY

Check the appropriate box(es) for the type of activity for this sampling event. See Appendix A for acronym definitions.

3.2.4 Box 4 - SHIPPING INFORMATION

Enter the date shipped, the carrier (e.g., Federal Express, Airbourne, etc.) and the air bill number in the appropriate spaces.

3.2 5 Box 5 - SHIP TO

Enter the laboratory name, full address and laboratory contact (e.g., Sample Custodian).

3.2.6 Box 6 - PRESERVATIVE

This box provides a list of commonly used preservatives. Enter the appropriate preservative in Column D. If you enter "5" on the Organic Traffic Report or "7" on the Inorganic Traffic Report indicating "Other", specify the preservative used at the bottom of the "Sample Documentation" area.

If you are using more than one type of preservative, you may either note the preservatives in the box specifically under the requested analyses (e.g., in the Cyanide box enter "2") or list them, separated by commas, in the same order as the checked sample analyses. (Alternatively, the analyses may be listed on separate lines.)

3.2.7 Box 7 - SAMPLE DESCRIPTION

This box provides a list of the description/matrices of the samples that are collected. Enter the appropriate description in Column A.

3.3 SAMPLE DOCUMENTATION

3.3.1 SAMPLE NUMBERS

Carefully transcribe the CLPAS sample numbers from the printed labels onto the Organic or Inorganic Traffic Report/Chain-of-Custody forms in the column labeled "CLP Sample Numbers".

CLPAS sample numbers have the following formats: YX123 for organic and MYX123 for inorganic samples. See Appendix B for examples.

3.3.2 Column A - SAMPLE DESCRIPTION

Enter the appropriate sample description code from Box 7.

Note: Item #6 "Oil" and Item #7 "Waste" are for RAP projects only. Do not ship oily samples or waste samples without making prior arrangements with the EPA.

3.3.3 Column B - CONCENTRATION

Enter "L" for low and "M" for medium concentration samples. (Prior arrangements must have been made with the ESAT RSCC coordinator, CLASS and the laboratories accepting the samples before shipping medium concentration samples. At this time, high concentration samples must be scheduled through the RAP system.)

NOTE: Medium concentration samples must be shipped in metal cans.

3.3.4 Column C - SAMPLE TYPE COMPOSITE/GRAB

Enter the type of sample you collected. A composite is a sample composed of more than one discrete sample. A grab is a discrete sample.

3.3.5 Column D - PRESERVATIVE USED

Enter the preservative used from Box 6.

3.3.6 Column E - CLPAS ANALYSIS

Check the analytical fractions requested for each sample, for example, VOAs, BNAs and Pesticides/PCBs are for low/medium concentration organics. Total metals and cyanide are for low/medium concentration inorganics.

NOTE: If dissolved metals are requested, a note must be added indicating that the samples have been field filtered and that digestion is required. See Attachment 2 for an example.

3.3.7 Column F - REGIONAL SPECIFIC TRACKING NUMBERS OR TAG NUMBERS

Region 9 does not issue tracking numbers or tag numbers. Samplers may use this column for sampler specific tracking numbers or for "Special Instructions". If you choose to use this as "Special Instructions", be sure to note, at the bottom of the "Sample Documentation" area, what the special handling is. The number and type of containers could be entered here. (e.g., 3-40 mL, 6-1L)

3.3.8 Column G - STATION LOCATION NUMBER

Enter the station location in the space provided.

3.3.9 Column H - MO/DAY/YEAR/TIME OF SAMPLE COLLECTION

Record the month, day, year and time (use military time, e.g., 1600 = 4:00 pm) of sample collection.

3.3.10 Column I - SAMPLER INITIALS

Enter your initials.

3.3.11 Column J - CORRESPONDING CLP ORGANIC/INORGANIC SAMPLE NUMBER

Enter the corresponding CLP sample number for organic or inorganic CLPAS analysis.

3.3.12 Column K - DESIGNATED FIELD QC

NOTE: This column is NOT to be used for the designated laboratory QC samples. Information entered here is not reproduced onto the laboratories' copies.

Enter the appropriate qualifier as listed below for "Blind" Field QC samples in this column. (NOTE: All samples must have a qualifier.)

Blind Field QC	Qualifier
Blind Blanks (field, etc.)	B
Blind Field Duplicates	D
Blind Field Spikes	S
Blind PE Samples	PE
All other field samples	--

"B" = These are blanks and include trip blanks (T), field blanks (F) and equipment blanks (E). Blanks may be further identified by the letter in parenthesis. For example, B(T) indicates that the sample is a trip blank.

"D" = These are field duplicates. Do <u>not</u> include samples designated as laboratory duplicates. The primary sample is identified with "--" and the duplicate is given "D" in column K. In addition, the station locations should also identify the primary and duplicate samples. For example, MW-1 is the primary sample and MW-1B is the duplicate sample.

"S" = These are spiked field samples and are generated by field personnel

"PE" = These are performance evaluation samples. They are spiked samples but are not field samples. They are usually prepared by other than field personnel.

"--" = All other samples not designated as blind field QC samples are given this qualifier.

3.4 "SHIPMENT FOR CASE COMPLETE (Y/N)"

This should reflect the status of the samples scheduled to be shipped to a laboratory for a specific case. Only when ALL samples scheduled for shipment to a laboratory for a specific case have been shipped is the case complete.

3.5 "PAGE 1 OF ____"

Enter the number of Traffic Report/Chain-of-Custody Record form(s) enclosed in each cooler. The form(s) accompanying each cooler must list <u>only</u> those samples contained in that cooler.

3.6 "SAMPLE USED FOR SPIKE AND/OR DUPLICATE"

Enter the sample number of the sample designated for laboratory spike and/or duplicate analysis. This is also known as the Laboratory QC sample. This sample should be included in the first shipment to the laboratory and in the first shipment for each subsequent sample delivery group (SDG).

DO NOT enter samples designated as blind field duplicates in this block.

3.7 "ADDITIONAL SAMPLER SIGNATURES"

Record additional sampler signatures that are different from that in Box 2.

3.8 "CHAIN OF CUSTODY SEAL NUMBER"

Enter the Chain of Custody Seal Number used to seal the cooler, if applicable.

3.9 Instructions summarizing CLP sample volumes, packaging and shipment reporting requirements are printed on the back of the Traffic Reports.

4.0 REGIONAL ANALYTICAL PROGRAM (RAP) CHAIN-OF-CUSTODY FORMS

4.1 CASE DOCUMENTATION

Complete this form when collecting RAP samples. See Attachment 4 for an example.

4.1.1 PROJECT NUMBER

Enter the RAP case number in this box.

4.1.2 PROJECT NAME

Leave this space blank.

4.1.3 SAMPLERS (Signature)

Record all sampler signatures in this box.

4.2 SAMPLE DOCUMENTATION

4.2.1 SAMPLE NUMBERS

No sample numbers are provided. Samplers should designate their own numbers and enter them in the space labeled STA.NO.

4.2.2 DATE

Enter the month, day and year the sample was collected in the "DATE" column.

4.2.3 TIME

Enter the time (using military time) in the "TIME" column.

4.2.4 COMP/GRAB

Check the kind of sample collected in the composite or grab column.

4.2.5 STATION LOCATION

Enter the sample site location in the space provided.

4.2.6 SAMPLE MATRIX

For each sample, enter the appropriate sample matrix description in the right third portion of the "STATION LOCATION" column.

4.2.7 NO. OF CONTAINERS

Enter the total number of sample containers collected for each matrix at each station location.

4.2.8 SAMPLE ANALYSES

There are six slanted columns to be used to specify the kind of analysis to be performed by the laboratory. Enter the appropriate analysis in each column. Mark the box of the appropriate analysis for each sample collected.

4.2.9 REMARKS

The items listed below are to be included in this area on the appropriate sample line.

4.2.9.1 CONCENTRATION

Enter "L" for low concentration, "M" for medium concentration and "H" for high concentration.

NOTE: Medium and high concentration samples must be shipped in metal cans.

4.2.9.2 PRESERVATIVE USED

Enter the preservative used.

If more than one type of preservative is used for a sample, separate the preservative references with commas. The sequence of the reference numbers must follow the sequence of the requested "RAP Analysis" parameters that are recorded in the analysis columns.

4.2.9.3 SAMPLE USED FOR SPIKE AND/OR DUPLICATE

Enter the sample number designated for spike and/or duplicate analysis. This is also known as the Laboratory QC sample. This sample should be included in the first shipment to the laboratory and in the first shipment for each subsequent sample delivery group (SDG).

4.3 AIRBILL NUMBER

The airbill number should be entered on the first signature line, in the box marked "Received by: (Signature)".

4.4 "REMARKS" BOX

Located in the lower right hand corner of the Chain of Custody is a box labeled "Remarks". The following items should be entered there.

4.4.1 CHAIN OF CUSTODY SEAL NUMBER

Enter the Chain of Custody Seal Number used to seal the coolers, if applicable, in the box labeled "Remarks", in the lower right-hand corner.

4.4.2 LABORATORY NAME

Enter the Laboratory name in the box labeled "Remarks", in the lower right-hand corner.

4.4.3 SHIPPING COMPLETE?

Enter "yes, shipping is complete" or "No, shipping is not complete" in the box labeled "Remarks", in the lower right-hand corner.

4.4.4 CARRIER

Enter the carrier (e.g., "Fed Ex") in the box labeled "Remarks", in the lower right-hand corner.

5.0 SAMPLE BOTTLES

5.1 Sample bottles be labeled with the following information:

a. Case number
b. Date/Time of collection
c. Matrix/Concentration
d. Station Location
e. Sample number (CLP or sampler designated)
f. Analysis
g. Preservative

5.2 Pre-printed, self-adhesive labels are provided for CLPAS Organic, CLPAS Inorganic and RAP samples.

5.2.1 Transcribe the appropriate sample number onto the corresponding bottle label and/or affix the sample number label onto the bottle.

5.2.2 Destroy all unused labels or return them to the ESAT RSCC coordinator. DO NOT use them for future samplings. New sample numbers will be assigned.

6.0 FIELD QA/QC SUMMARY FORM

6.1 Complete one form per laboratory per matrix for each sampling event. For long term projects, complete a form(s) after each week of sampling. Complete the header portion even if no QA/QC samples were provided.

6.2 Complete all applicable entries. Please use the appropriate sample numbers for each laboratory. (e.g., for the laboratory performing CLPAS organics, use the CLP organic sample numbers, YX123, etc. For the laboratory performing RAP analyses, use the RAP sample numbers, SY0123, etc.) Please do not use station locations. If a laboratory is performing more than one type of analysis, list all applicable sample numbers.

6.3 This form is very important for validation purposes. The validators will compare the results of duplicates and assess the quality of blanks, if they know which samples they are. Failure to provide this information will delay the completion of validation.

Appendix A

TYPE OF ACTIVITY

Check the box which describes the funding lead for this sampling event:

Funding Lead

SF = Superfund
PRP = Potentially Responsible Party
ST = State
FED = Federal

Check one or more boxes, as appropriate, which describe the task of this sampling event:

Pre-Remedial

PA = Preliminary Assessment
SSI = Screening Site Investigation
LSI = Listing Site Investigation

Remedial

RIFS = Remedial Investigation Feasibility Study
RD = Remedial Design
O&M = Operations and Maintenance
NPLD = National Priorities List

Removal

CLEM = Classic Emergency
REMA = Removal Assessment
REM = Removal
OIL = Oil Response
UST = Underground Storage Tank Response

Appendix B

CLP SAMPLE NUMBERS

Each sample is assigned a unique sample number. A "sample" is defined as follows:

- one matrix, e.g., water, soil/sediment, fish, etc.
- one station location
- one analytical program, e.g., CLPAS organics, CLPAS inorganics or a RAP analysis
- one laboratory

Sample numbers for CLPAS analyses:

- CLPAS Organic sample numbers consist of five alpha-numerics, always beginning with "Y"

  Example - YJ386

- CLPAS Inorganic sample numbers consist of six alpha-numerics, always beginning with "MY"

  Example - MYG528

Examples for assigning sample numbers:

- CLPAS Volatiles & CLPAS Pesticides/PCBs receive the <u>SAME SAMPLE NUMBER</u>, if the samples are:
  - the same matrix
  - part of the same analytical program, e.g., CLPAS organics
  - from the same station location
  - going to the same laboratory

- CLPAS Volatiles & CLPAS Pesticides/PCBs receive <u>DIFFERENT SAMPLE NUMBERS</u>, if the samples are:
  - the same matrix
  - part of the same analytical program, e.g., CLPAS organics
  - from the same station location
  - going to different laboratories

- CLPAS Volatiles & CLPAS Metals receive <u>DIFFERENT SAMPLE NUMBERS</u>, if the samples are:
  - the same matrix
  - part of different analytical programs, e.g., CLPAS organics & CLPAS inorganics
  - from the same station location
  - going to the same laboratory

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (If applicable):

Case No: 17235

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
$F		9	ACE	1-7-94	Fed. Express

Regional Information	Sampler (Name)	Airbill Number
	Gail Jones	091234567 8

Non-Superfund Program	Sampler Signature	5. Ship To
	Gail Jones	Alpha Lab 123 Pine Ave NY, NY 10001 ATTN: John Doe

Site Name: Toxic Dump

City, State: Smallville CA

Site Spill ID: 99

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF	X		RIFS X	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis VOA	E BNA	E Pest/ PCB	E High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B - Blank, S - Spike, D - Duplicate, PE - Perform. Eval., — - Not a QC Sample)
YJ126	2	L	G			X				MW-1	1-6-94 0900	gf	MYG00X	—
YJ127	2	L	G			X				MW-2	1-6-94 1000	gf	MYG003	—
YJ128	2	L	G			X				MW-3	1-6-94 1100	gf	MYG005	—

Shipment for Case complete? (Y/N): N

Page 1 of 1

Sample used for a spike and/or duplicate: YJ127

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Gail Jones	1-7-94 1600	091234567 8			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

Split Samples ☐ Accepted (Signature)

☐ Declined

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

ATTACHMENT 1

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 17235

1. Project Code: $F | Account Code:

2. Region No.: 9 | Sampling Co.: Ace

4. Date Shipped: 1-7-94 | Carrier: Fed. Express

Regional Information:

Sampler (Name): Gail Jones

Airbill Number: 091234569 99

Non-Superfund Program:

Sampler Signature: Gail Jones

5. Ship To: Beta Labs, Inc.
465 Maple Ave.
Atlanta, GA 04507

ATTN: Mary Smith

Site Name: Toxic Dump

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF	X		RIFS X	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPL D	UST

City, State: Smallville CA | Site Spill ID: 99

6. Preservative (Enter In Column D)
1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (Specify)
N. Not preserved

7. Sample Description (Enter In Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E - RAS Analysis: Metals: Total	Metals: Dissolved	Low Conc only: Cyanide	Low Conc only: Nitrate/Nitrite	Low Conc only: Fluoride	High only: pH	High only: Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank, S = Spike, D = Duplicate, PE = Perform. Eval, — = Not a QC Sample)
MYG001	2	L	G	23	X		X						MW-1	1-6-94 0900	JB	YJ126	—
MYG002	2	L	G	2		X						A	MW-1	1-6-94 0915	JB	YJ126	—
MYG003	2	L	G	23	X		X						MW-2	1-6-94 1000	JB	YJ127	—
MYG004	2	L	G	2		X						A	MW-2	1-6-94 1015	JB	YJ127	—

A = Field Filtered, 0.45 micron Digestion required for all dissolved samples

Shipment for Case complete? (Y/N): (N)

Page 1 of 1

Sample used for a spike and/or duplicate: MYG003 + MYG004

Additional Sampler Signatures: John Brown

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Gail Jones	1-7-94 1600	091234569 99			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)

Replaces EPA Form (2075-6), previous edition which may be used

ATTACHMENT 2

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION
75 Hawthorne Street
San Francisco, California 94105

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
R94S12	

SAMPLERS: (Signature)
K. Pettit

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	MATRIX	NO. OF CONTAINERS	LOW LEVEL VOA	SULFIDE	NITRATE/NITRITE				REMARKS
SyD000	7/21/94	1000		✓	FRONT - MW	GW	4	X	X	X				VOA'S PRESERVED W/ HCL SULFIDE PRESERVED W/ NaOH + Zn ACETATE
SyD001	7/21/94	1030		✓	BACK - MW	GW	4	X	X	X				
SyD002	7/21/94	1300		✓	EAST - MW	GW	4	X	X	X				LABQC
SyD003	7/21/94	1320	✓		EAST - S	SOIL	1			X				LABQC
														ALL SOIL AND GW SAMPLES ARE LOW CONCENTRATION

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
K. Pettit	7/22/94 1600	1234567890			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks LAB: REGION 9 SHIPPING IS COMPLETE CARRIER: FED EX, 7/22/94 CUSTODY SEAL #: 12345	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

ATTACHMENT K-3

FIELD QA/QC SUMMARY FORM

ATTACHMENT 4

Instructions: Complete one form per laboratory and per matrix for each sampling eve

Date: 1-10-94
Sampler: Gail Jones
Office: ACE
Phone: (415) 456-7890

Site: Toxic Dump
Case/SAS #: 17235
Laboratory: Beta Labs, Inc

Matrix: (check one) X Groundwater ___ Surface Water ___ Surface Soil ___ Subsurface Soil ___ Air ___ Other ___

I. BLANKS

Sample #	Type (circle one)	Date Collected
MVG 021	(Equip) / Field / Travel	1-9-94
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collect

III. LAB QC SAMPLES

Sample #	Date Collec
MVG 003	1-6-94
MVG 004	1-6-94

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
MVG 015	MVG 016	1-9-94	a / (b) / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite sp
b= consecutive
c= colocated
d= consecutive
soil sleeve:

V. Checklist of Field Problems Encountered

	Sample # / Date(s) of Occurrence / Comments
X None	
___ Pumping Equipment Problems	
___ Sample Filtering Problems	
___ Less Than Required Sample Volume	
___ Low Flow/Recharge Rates	
___ Preservation Problems	
___ Samples Not Shipped in 24 hrs.	
___ Federal Express Delay	
___ Other	

ATTACHMENT 5

SAMPLE SHIPMENT INFORMATION

DATE: _____ # OF PAGES: _____

TO: GAIL JONES, RSCC COORDINATOR FROM: _____

CO.: EPA REGION 9 (P-3-2) CO.: _____

PHONE #: (415) 744-1498 PHONE #: _____

FAX #: (415) 744-1476 FAX #: _____

//

CASE #: _____ LAB NAME: _____

COOLERS: _____ SHIPPING DATE: _____

CARRIER: _____ AIRBILL #: _____

# SAMPLES	CONC/MATRIX	ANALYSES

Is this sampling event complete with this shipment? Y N

COMMENTS: _____

//

CASE #: _____ LAB NAME: _____

COOLERS: _____ SHIPPING DATE: _____

CARRIER: _____ AIRBILL #: _____

# SAMPLES	CONC/MATRIX	ANALYSES

Is this sampling event complete with this shipment? Y N

COMMENTS: _____

Attachment 6

Health and Safety Plan

530 HOWARD STREET, SUITE 400, SAN FRANCISCO, CA 94105
PHONE: (415) 281-8730
FAX: (415) 281-8735

TECHLAW INC.

February 16, 2001

Mr. James Chang (SFD-8-1)
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

Subject: **Contract No. 68-W-98-0220 / WA No. 220-11-09WQ**
George/Norton Air Force Base Work Assignment
Split Sampling Plan, Soil Pesticide Investigation, March 2001, George Air Force Base

Dear Mr. Chang,

Enclosed please find a draft of the Split Sampling Plan, Pesticides Investigation, March 2000 Event, George Air Force Base. The Split Sampling Plan describes split soil sampling activities to be performed at George Air Force Base during the March 2000 Pesticides Investigation. A copy of the Split Sampling Plan has also been forwarded to Mr. Joe Eidelberg and Mr. Rich Freitas. Sample numbers, for CLP analysis, will be obtained from Mr. Rich Freitas and included in Attachment 3 in the Final Split Sampling Plan. The Health and Safety Plan will also be included in the Final Split Sampling Plan. Upon approval by U.S. EPA, TechLaw will forward the Final Split Sampling Plan to the complete distribution list.

Thank you for the opportunity to provide U. S. EPA with technical services at George Air Force Base. TechLaw looks forward to working with you in the future. Should you have any questions, please call either of the undersigned at (415) 281-8730.

Sincerely,

Indira Balkissoon
Site Manager

Jim Cureton
Senior Hydrogeologist

copy to: Angela Commisso, Region 9 w/o attachment
P. Brown-Derocher, Central Files
Joe Eidelberg, U.S. EPA
Rich Freitas, U.S. EPA

geo072
01500.011.03.02.01.OX.Q7.00